44. (Amended) The information recording multibeam light source according to claim 26, wherein n = 4.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 2, 6, 8, 9, 22, 26, 28, 29 and 41-44 are pending in the present application. Claims 1, 3-5, 7, 10, 21, 23-25, 27 and 30 have been cancelled, and Claims 2, 6, 22, 26 and 41-44 have been amended by the present amendment.

In the outstanding Office Action, Claims 1-10, 21-30 and 41-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yamaguchi in view of Iwasa et al, which is respectfully traversed.

Claims 2, 6, 22 and 26 have been rewritten in independent form. For example, Claim 2 is directed to an information recording multibeam light source including a semiconductor laser array and adjustment means. The adjustment means is capable of rotating the semiconductor laser array around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of a first and an n-th light emitting points included in the semiconductor laser array. Independent Claims 6, 22 and 26 include similar features.

In a non-limiting example, as described in the specification at page 15, lines 6-11, and as shown in Figure 1, for example, because the adjustment means operates in such a manner that the rotation for the adjustment is carried out around the midpoint PM (Figure 1) of the straight line which is drawn connecting the centers of the first and the fourth (n-th) light emitting points, ch1 and ch4, out of the four points ch1 to ch4, the deviation from the ideal case and the shape of the beam spots projected onto the recording substrate 16 (see Figure 2,

for example) can be minimized with relative ease, thereby preventing the degradation of the recorded image quality.

The outstanding Office Action indicates Yamaguchi teaches an adjustment means for adjusting a position of the plural semiconductor laser arrays, but does not specifically address the subject matter recited in original dependent Claims 2, 6, 22 and 26. Applicant notes Yamaguchi does not teach or suggest an adjustment means position adjuster which is capable of rotating the semiconductor laser arrays around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of a first and an n-th light emitting point as claimed by the present invention.

Rather, Yamaguchi merely discloses rotating a light source unit, in which semiconductor laser arrays, collimator lenses, and beam composing medium are integrated around a standard optical axis which is a rotation axis (see Claim 6, 20 and 24 and in column 12, lines 4-5 regarding the standard optical axis). The adjustment around the standard optical axis in Yamaguchi is completely different than the adjustment of the present invention which rotates the semiconductor laser array around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of a first and an n-th light emitting point. That is, the device to be rotated and the rotation axis thereof is different between Yamaguchi and the claimed invention. Iwasa et al also do not teach or suggest the claimed invention.

Further, Claims 8 and 28 of the present invention recite that a first laser array defining an optical axis of laser beams aligned to be approximately parallel to and tilted by a relatively minute angle from that of other laser arrays, so that a position of the laser beam spots on the recording substrate formed by the first laser array is adjusted to be displaced from that of beam spots from the other laser arrays by a predetermined distance along the primary scanning direction.

On the contrary, Applicants note the semiconductor laser array in Yamaguchi has "n" pieces of light emitting points. The light source unit in Yamaguchi has "m" pieces of the semiconductor array. Semiconductor laser beams of "mn" pieces have an angle of θB against the arrangement direction of the light emitting points. Namely, the laser beams of "mn" pieces are parallel to each other. In addition, Yamaguchi discloses rotatively moving and adjusting the combined unit to incline the arrangement direction of the light emitting points of the semiconductor array by a predetermined angle θR from the scanning direction. This differs from Claims 8 and 28.

Accordingly, it is respectfully submitted independent Claims 2, 6, 22 and 26 and each of the claims depending therefrom are allowable.

In addition, the specification has been amended to correct a minor informality and it is believed no new matter is added.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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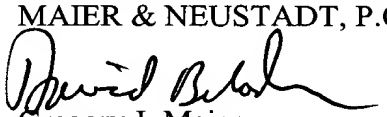

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IN THE SPECIFICATION

Page 15, beginning at line 6, please replace the paragraph as follows:

--In addition, since the above means for adjustment operates in such a manner that the rotation for the adjustment is carried out around the midpoint [M] PM (FIG. 1) of the straight line which is drawn connecting the centers of the first and the fourth (n-th) light emitting points, ch_1 and ch_4, out of the four points ch_1~ch_4 the deviation from the ideal case in the shape of the beam spots projected onto the recording substrate 16 can be minimized with relative ease, thereby preventing the degradation of the recorded image quality.--

IN THE CLAIMS

--1. (Canceled)

2. (Twice Amended) [The] An information recording multibeam light source [according to claim 1, wherein:] comprising:

a semiconductor laser array including a plurality of light emitting points in a single package, said plurality of light emitting points being formed to be positioned in linear relationship to one another and having an equidistant pitch so as to respectively emit laser beams simultaneously scanned over a recording substrate; and

adjusting means for adjusting a position of said semiconductor laser array so as to satisfy the relation $\theta \leq \tan^{-1}\{1/(n-1)\}$, where angle θ is defined by first and second straight lines on the recording substrate, said first straight line drawn perpendicular to a primary

scanning direction and said second straight line drawn through respective centers of a first and an n-th laser beam spot formed by projecting laser beams emitted respectively from said plurality of light emitting points,

wherein said adjusting means is capable of rotating said semiconductor laser array around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of said first and n-th light emitting points.

5. (Canceled)

6. (Twice Amended) [The] An information recording multibeam light source [according to claim 5, wherein:] comprising:

a plurality of semiconductor laser arrays each including a plurality of light emitting points in a single package, said plurality of light emitting points being formed to be positioned in linear relationship to one another and having an equidistant pitch so as to respectively emit laser beams simultaneously scanned over a recording substrate; and

adjusting means for adjusting each of said semiconductor laser arrays individually to a position so as to satisfy the relation $\theta \leq \tan^{-1}\{1/(n-1)\}$, where angle θ is defined by first and second straight lines on the recording substrate for each of said semiconductor laser arrays, said first straight line drawn perpendicular to a primary scanning direction and said second straight line drawn through respective centers of a first and an n-th laser beam spot formed by projecting laser beams emitted respectively from said plurality of light emitting points,

wherein said adjusting means is capable of rotating each one of said plurality of semiconductor laser arrays around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of said first and n-th light emitting points.

21. (Canceled).

22. (Twice Amended) [The] An information recording multibeam light source [according to claim 21, wherein:] comprising:

a semiconductor laser array including a plurality of light emitting points in a single package, said plurality of light emitting points being formed to be positioned in linear relationship to one another and having an equidistant pitch so as to respectively emit laser beams simultaneously scanned over a recording substrate; and

a position adjustor configured to adjust a position of said semiconductor laser array so as to satisfy the relation $\theta \leq \tan^{-1}\{1/(n-1)\}$, where angle θ is defined by first and second straight lines on the recording substrate, said first straight line drawn perpendicular to a primary scanning direction and said second straight line drawn through respective centers of a first and an n-th laser beam spot formed by projecting laser beams emitted respectively from said plurality of light emitting points,

wherein said position adjustor [is capable of rotating] is configured to rotate said semiconductor laser array around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of said first and n-th light emitting points.

25. (Canceled)

26. (Twice Amended) [The] An information recording multibeam light source [according to claim 25, wherein:] comprising:

a plurality of semiconductor laser arrays each including a plurality of light emitting points in a single package, said plurality of light emitting points positioned in linear relationship to one another and having an equidistant pitch so as to respectively emit laser beams simultaneously scanned over a recording substrate; and

a position adjustor configured to adjust each of said semiconductor laser arrays individually to a position so as to satisfy the relation $\theta \leq \tan^{-1}\{1/(n-1)\}$, where angle θ is defined by first and second straight lines on an image recording substrate for each of said semiconductor laser arrays, said first straight line drawn perpendicular to a primary scanning direction and said second straight line drawn through respective centers of a first and an n-th

laser beam spots formed by projecting laser beams emitted respectively from said plurality of light emitting points,

wherein said position adjustor [is capable of rotating] is configured to rotate each one of said plurality of semiconductor laser arrays around at least a vicinity of a midpoint of a straight line drawn by connecting the centers of said first and n-th light emitting points.

41. (Amended) The information recording multibeam light source according to claim [1] 2, wherein n = 4.

42. (Amended) The information recording multibeam light source according to claim [5] 6, wherein n = 4.

43. (Amended) The information recording multibeam light source according to claim [21] 22, wherein n = 4.

44. (Amended) The information recording multibeam light source according to claim [25] 26, wherein n = 4.--